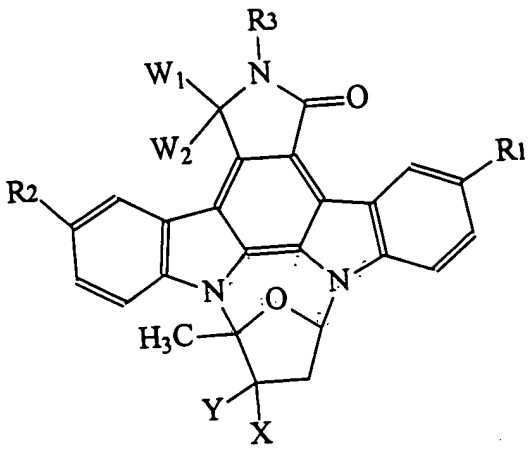
WHAT IS CLAIMED IS:

1. A compound defined by the general formula (I):



wherein:

one of R^1 and R^2 is selected from the group consisting of:

a) $-CO(CH_2)_jR^4$, wherein j is 1 to 6, and R^4 is selected from the group consisting of:

1) hydrogen and a halogen;

2) $-NR^5R^6$, wherein R^5 and R^6 independently are hydrogen, substituted lower alkyl, unsubstituted lower alkyl, substituted aryl, unsubstituted aryl, substituted heteroaryl, unsubstituted heteroaryl, substituted aralkyl, unsubstituted aralkyl, lower alkylaminocarbonyl, or lower alkoxycarbonyl; or R^5 and R^6 are combined with a nitrogen atom to form a heterocyclic group;

3) N_3;

4) $-SR^{27}$, wherein R^{27} is selected from the group consisting of:

i) hydrogen;

ii) substituted lower alkyl;

iii) unsubstituted lower alkyl;

iv) substituted aryl;

v) unsubstituted aryl;

vi) substituted heteroaryl;

vii) unsubstituted heteroaryl;

viii) substituted aralkyl;

ix) unsubstituted aralkyl;

x) thiazolinyl;

xi) $-(CH_2)_aCO_2R^{28}$, wherein a is 1 or 2, and R^{28} is selected from the group consisting of: hydrogen and lower alkyl; and

xii) $-(CH_2)_aCONR^5R^6$; and

5) OR^{29} (wherein R^{29} is hydrogen, substituted lower alkyl, unsubstituted lower alkyl, or COR^{30} (wherein R^{30} is hydrogen, lower alkyl, substituted aryl, unsubstituted aryl, substituted heteroaryl, or unsubstituted heteroaryl));

b) $-CH(OH)(CH_2)_bR^{4A}$, wherein b is 1 to 6 and R^{4A} is hydrogen or the same as R^4;

c) $-(CH_2)_dCHR^{31}CO_2R^{32}$ wherein d is 0 to 5, R^{31} is hydrogen, $-CONR^5R^6$, or CO_2R^{33} (wherein R^{33} is hydrogen or lower alkyl), and R^{32} is hydrogen or lower alkyl;

d) $-(CH2)_dCHR^{31}CONR^5R^6$;

e) $-(CH_2)_kR^7$ wherein k is 2 to 6, and R^7 is halogen, CO_2R^8 (wherein R^8 is hydrogen, lower alkyl, substituted aryl, unsubstituted aryl, substituted heteroaryl, or unsubstituted heteroaryl), $CONR^5R^6$, substituted aryl, unsubstituted aryl, substituted heteroaryl, unsubstituted heteroaryl, OR^9 (wherein R^9 is hydrogen, substituted lower alkyl, unsubstituted lower alkyl, acyl, substituted aryl, or unsubstituted aryl), SR^{27B} (wherein R^{27B} is the same as R^{27}), $NR^{10}R^{11}$ (wherein R^{10} and R^{11} are the same as R^5 and R^6) or N_3;

f) $-CH=CH(CH_2)_mR^{12}$ wherein m is 0 to 4, and R^{12} is hydrogen, lower alkyl, CO_2R^{8A} (wherein R^{8A} is the same as R^8), $-CONR^5R^6$, substituted aryl, unsubstituted aryl, substituted heteroaryl, unsubstituted heteroaryl, OR^{9A} (wherein R^{9A} is the same as R^9), or $NR^{10A}R^{11A}$ (wherein R^{10A} and R^{11A} are the same as R^5 and R^6);

g) $-CH=C(CO_2R^{33A})_2$, wherein R^{33A} is the same as R^{33};

h) $-C\equiv C(CH_2)_nR^{13}$, wherein n is 0 to 4, and R^{13} is the same as R^{12};

i) $-CH_2OR^{44}$, wherein R^{44} is substituted lower alkyl;

and the other of R^1 or R^2 is selected from the group consisting of

j) hydrogen, lower alkyl, halogen, acyl, nitro, $NR^{14}R^{15}$ (wherein R^{14} or R^{15} is hydrogen or lower alkyl, and the other is hydrogen, lower alkyl, acyl, carbamoyl, lower alkylaminocarbonyl, substituted arylaminocarbonyl or unsubstituted arylaminocarbonyl);

k) $-CH(SR^{34})_2$, wherein R^{34} is lower alkyl or alkylene;

l) $-CH_2R^{35}$, wherein R^{35} is OR^{36} (wherein R^{36} is tri-lower alkyl silyl in which the three lower alkyl groups are the same or different, or is the same as R^{29}), or SR^{37} (wherein R^{37} is the same as R^{27});

m) $-CO(CH_2)_qR^{16}$, wherein q is 1 to 6, and R^{16} is the same as R^4;

n) $-CH(OH)(CH_2)_eR^{38}$, wherein e is 1 to 6, and R^{38} is the same as R^{4A};

o) $-(CH_2)_fCHR^{39}CO_2R^{40}$, wherein f is 0 to 5, R^{39} is the same as R^{31} and R^{40} is the same as R^{32};

p) $-(CH_2)_rR^{17}$, wherein r is 2 to 6, and R^{17} is the same as R^7;

q) $-CH=CH(CH_2)_tR^{18}$, wherein t is 0 to 4, and R^{18} is the same as R^{12};

r) $-CH=C(CO_2R^{33B})_2$, wherein R^{33B} is the same as R^{33};

s) $-C\equiv C(CH_2)_uR^{19}$, wherein u is 0 to 4, and R^{19} is the same as R^{13});

R^3 is hydrogen, acyl, or lower alkyl;

X is selected from the group consisting of:

a) hydrogen;

b) formyl;

c) lower alkoxycarbonyl;

d) $-CONR^{20}R^{21}$, wherein:

R^{20} and R^{21} independently are:

hydrogen;

lower alkyl;

$-CH_2R^{22}$, wherein R^{22} is hydroxy, or

$-NR^{23}R^{24}$ (wherein R^{23} or R^{24} is hydrogen or lower alkyl, and the other is hydrogen, lower alkyl, or the residue of an α-amino acid in which the hydroxy group of the carboxyl group is excluded, or R^{23} and R^{24} are combined with a nitrogen atom to form a heterocyclic group); and

e) $-CH=N-R^{25}$, wherein R^{25} is hydroxy, lower alkoxy, amino, guanidino, or imidazolylamino;

Y is hydroxy, lower alkoxy, aralkyloxy, or acyloxy; or

X and Y combined represent, -X-Y-, =O, $-CH_2O(C=O)O-$, $-CH_2OC(=S)O-$, $-CH_2NR^{26}C(=O)-$ (wherein R^{26} is hydrogen or lower alkyl), $-CH_2NHC(=S)O-$, $-CH_2OS(=O)O-$, or $-CH_2OC(CH_3)_2O-$; and

W^1 and W^2 are hydrogen, or W^1 and W^2 together represent oxygen;

or a pharmaceutically acceptable salt thereof.

2. The compound of claim 1 wherein:

a) one of R^1 and R^2 is selected from the group consisting of $-(CH_2)_kR^7$, $-CH=CH(CH_2)_mR^{12}$, $-C\equiv C(CH_2)_nR^{13}$, $-CO(CH_2)_jSR^{27}$ and $-CH_2OR^{44}$, wherein R^{44} is methoxymethyl, ethoxymethyl, or methoxyethyl;

and the other of R^1 and R^2 is selected from the group consisting of $-(CH_2)_rR^{17}$, $-CH=CH(CH_2)_tR^{18}$, $-C\equiv C(CH_2)_uR^{19}$, $NR^{14}R^{15}$, hydrogen, halogen, nitro, $-CH_2O-$, substituted lower alkyl, unsubstituted lower alkyl, $-CO(CH_2)_qSR^{27}$, $-CH_2R^{35}$, wherein R^{35} is OR^{36}, and $-CH_2SR^{37}$, wherein R^{37} is selected from the group consisting of lower alkyl, pyridyl, and benzimidazole;

b) k and r are each 2, 3, or 4;

c) j and q are each 1 or 2;

d) R^7 and R^{17} are:

1) selected independently from the group consisting of : phenyl, pyridyl, imidazolyl, thiazolyl, or tetrazolyl; or

2) selected pairwise, from the group consisting of:

i) $-CO_2R^8$ and CO_2R^{8A}, where R^8 and R^{8A}, independently, are hydrogen, methyl, ethyl, or phenyl;

ii) $-OR^9$ and $-OR^{9A}$, where R^9 and R^{9A}, independently, are hydrogen, methyl, ethyl, phenyl, or acyl;

iii) $-SR^{27B}$, where R^{27B} is selected from the group consisting of unsubstituted lower alkyl, 2-thiazoline, and pyridyl; and

iv) $-NR^{10}R^{11}$ and $-NR^{14}R^{15}$, where R^{10}, R^{11}, R^{14}, and R^{15}, independently, are selected from the group consisting of hydrogen, methyl, ethyl, phenyl, carbamoyl, and lower alkylaminocarbonyl;

e) R^{27} is selected from the group consisting of substituted lower alkyl, unsubstituted lower alkyl, substituted phenyl, unsubstituted phenyl, pyridyl, pyrimidinyl, thiazole, and tetrazole;

f) R^{36} is selected from the group consisting of methoxymethyl, ethoxymethyl, and methoxyethyl;

g) m, n, t and u each is 0 or 1; and

h) R^{12}, R^{13}, R^{18}, and R^{19} are independently selected from the group consisting of hydrogen, methyl ethyl, phenyl, pyridyl, imidazole, thiazole, tetrazole, $-CO_2R^8$, $-OR^9$, and $NR^{10}R^{11}$, wherein R^8, R^9, R^{10}, and R^{11} each is hydrogen, methyl, ethyl, or phenyl.

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3. The compound of claim 2, wherein R^3 is hydrogen or acetyl, X is hydroxymethyl or lower alkoxycarbonyl, Y is hydroxy or acetyloxy, and W^1 and W^2 are hydrogen.

4. The compound of claim 3, wherein X is methoxycarbonyl, Y is hydroxy, and R^3 is hydrogen.

5. The compound of claim 3 wherein:

one of R^1 and R^2 is selected from the group consisting of methoxycarbonylvinyl, ethoxycarbonylvinyl, styryl, 2-pyridylvinyl, 4-pyridylvinyl, 2-pyridylethyl, 4-pyridylethyl, phenylethyl, methoxypropynyl, hydroxypropynyl, $-COCH_2SEt$, $-C\equiv CCH_2NMeBn$, $-CH=CHEt$, $-(CH_2)_2SMe$, $-(CH_2)_2S$-2-thiazoline, $-(CH_2)_3SMe$, $-CH=CHEt$, $-CH=CH$-2-imidazole, $(CH_2)_2OC(=O)H$, methoxymethoxymethyl, ethoxymethoxymethyl, methoxyethoxymethyl, and 2-hydroxyethyl;

and the other of R^1 and R^2 is selected from the group consisting of hydrogen, halogen, methoxycarbonylvinyl, ethoxycarbonylvinyl, styryl, 2-pyridylvinyl, 4-pyridylvinyl, 2-pyridylethyl, 4-pyridylethyl, phenylethyl, nitro, amino, N-ethylurea, methoxypropynyl, hydroxypropynyl, $-COCH_2SEt$, $-C\equiv CCH_2NMeBn$, $-CH=CHEt$, $-(CH_2)_2SMe$, $-(CH_2)_2S$-2-thiazoline, $-(CH_2)_3SMe$, $-CH_2OMe$, $-CH_2OEt$, $-CH_2SEt$, pyridylthiomethyl, $-CH_2S$-2-benzimidazole,

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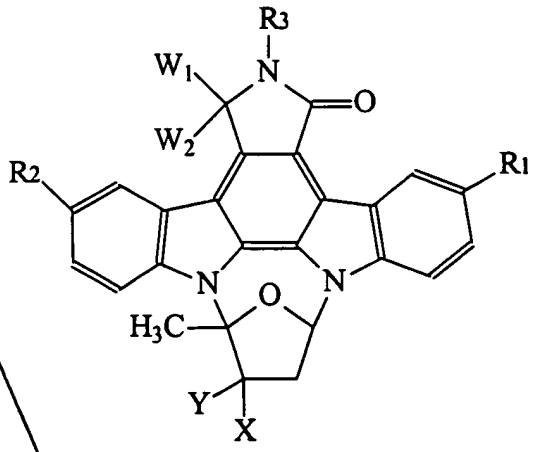
-CH=CHEt, -CH=CH-2-imidazole, -$(CH_2)_2OC(=O)H$, methoxymethoxymethyl, ethoxymethoxymethyl, methoxyethoxymethyl, and 2-hydroxyethyl.

6. A method for enhancing the function of a trophic factor responsive cell, comprising the step of contacting said cell with a compound defined by the general formula (I):



wherein:

one of R^1 and R^2 is selected from the group consisting of:

a) $-CO(CH_2)_jR^4$, wherein j is 1 to 6, and R^4 is selected from the group consisting of:

1) hydrogen and a halogen;

2) $-NR^5R^6$, wherein R^5 and R^6 independently are hydrogen, substituted lower alkyl, unsubstituted lower alkyl, substituted aryl, unsubstituted aryl, substituted heteroaryl, unsubstituted heteroaryl, substituted aralkyl, unsubstituted aralkyl, lower alkylaminocarbonyl, or lower alkoxycarbonyl; or R^5 and R^6 are combined with a nitrogen atom to form a heterocyclic group;

3) N_3;

4) $-SR^{27}$, wherein R^{27} is selected from the group consisting of:

i) hydrogen;

ii) substituted lower alkyl;

iii) unsubstituted lower alkyl;

iv) substituted aryl;

v) unsubstituted aryl;

vi) substituted heteroaryl;

vii) unsubstituted heteroaryl;

viii) substituted aralkyl;

ix) unsubstituted aralkyl;

x) thiazolinyl;

xi) $-(CH_2)_aCO_2R^{28}$, wherein a is 1 or 2, and R^{28} is selected from the group consisting of: hydrogen and lower alkyl; and

xii) $-(CH_2)_aCONR^5R^6$; and

5) OR^{29} (wherein R^{29} is hydrogen, substituted lower alkyl, unsubstituted lower alkyl, or COR^{30} (wherein R^{30} is hydrogen, lower alkyl, substituted aryl, unsubstituted aryl, substituted heteroaryl, or unsubstituted heteroaryl));

b) $-CH(OH)(CH_2)_bR^{4A}$, wherein b is 1 to 6 and R^{4A} is hydrogen or the same as R^4;

c) $-(CH_2)_dCHR^{31}CO_2R^{32}$ wherein d is 0 to 5, R^{31} is hydrogen, $-CONR^5R^6$, or CO_2R^{33} (wherein R^{33} is hydrogen or lower alkyl), and R^{32} is hydrogen or lower alkyl;

d) $-(CH2)_dCHR^{31}CONR^5R^6$;

e) $-(CH_2)_kR^7$ wherein k is 2 to 6, and R^7 is halogen, CO_2R^8 (wherein R^8 is hydrogen, lower alkyl, substituted aryl, unsubstituted aryl, substituted heteroaryl, or unsubstituted heteroaryl), $CONR^5R^6$, substituted aryl, unsubstituted aryl, substituted heteroaryl, unsubstituted heteroaryl, OR^9 (wherein R^9 is hydrogen, substituted lower alkyl, unsubstituted lower alkyl, acyl, substituted aryl, or unsubstituted aryl), SR^{27B} (wherein R^{27B} is the same as R^{27}), $NR^{10}R^{11}$ (wherein R^{10} and R^{11} are the same as R^5 and R^6) or N_3;

f) $-CH=CH(CH_2)_mR^{12}$ wherein m is 0 to 4, and R^{12} is hydrogen, lower alkyl, CO_2R^{8A} (wherein R^{8A} is the same as R^8), $-CONR^5R^6$, substituted aryl, unsubstituted aryl, substituted heteroaryl, unsubstituted heteroaryl, OR^{9A} (wherein R^{9A} is the same as R^9), or $NR^{10A}R^{11A}$ (wherein R^{10A} and R^{11A} are the same as R^5 and R^6);

g) $-CH=C(CO_2R^{33A})_2$, wherein R^{33A} is the same as R^{33};

h) $-C\equiv C(CH_2)_nR^{13}$, wherein n is 0 to 4, and R^{13} is the same as R^{12};

i) $-CH_2OR^{44}$, wherein R^{44} is substituted lower alkyl;

and the other of R^1 or R^2 is selected from the group consisting of

j) hydrogen, lower alkyl, halogen, acyl, nitro, $NR^{14}R^{15}$ (wherein R^{14} or R^{15} is hydrogen or lower alkyl, and the other is hydrogen, lower alkyl, acyl, carbamoyl, lower alkylaminocarbonyl, substituted arylaminocarbonyl or unsubstituted arylaminocarbonyl);

k) $-CH(SR^{34})_2$, wherein R^{34} is lower alkyl or alkylene;

l) $-CH_2R^{35}$, wherein R^{35} is OR^{36} (wherein R^{36} is tri-lower alkyl silyl in which the three lower alkyl groups are the same or different, or is the same as R^{29}), or SR^{37} (wherein R^{37} is the same as R^{27});

m) $-CO(CH_2)_qR^{16}$, wherein q is 1 to 6, and R^{16} is the same as R^4;

n) $-CH(OH)(CH_2)_eR^{38}$, wherein e is 1 to 6, and R^{38} is the same as R^{4A};

o) $-(CH_2)_fCHR^{39}CO_2R^{40}$, wherein f is 0 to 5, R^{39} is the same as R^{31} and R^{40} is the same as R^{32};

p) $-(CH_2)_rR^{17}$, wherein r is 2 to 6, and R^{17} is the same as R^7;

q) $-CH=CH(CH_2)_tR^{18}$, wherein t is 0 to 4, and R^{18} is the same as R^{12};

r) $-CH=C(CO_2R^{33B})_2$, wherein R^{33B} is the same as R^{33};

s) $-C\equiv C(CH_2)_uR^{19}$, wherein u is 0 to 4, and R^{19} is the same as R^{13});

R^3 is hydrogen, acyl, or lower alkyl;

X is selected from the group consisting of:

a) hydrogen;

b) formyl;

c) lower alkoxycarbonyl;

d) $-CONR^{20}R^{21}$, wherein:

R^{20} and R^{21} independently are:

hydrogen;

lower alkyl;

$-CH_2R^{22}$, wherein R^{22} is hydroxy, or

$-NR^{23}R^{24}$ (wherein R^{23} or R^{24} is hydrogen or lower alkyl, and the other is hydrogen, lower alkyl, or the residue of an α-amino acid in which the hydroxy group of the carboxyl group is excluded, or R^{23} and R^{24} are combined with a nitrogen atom to form a heterocyclic group); and

e) $-CH=N-R^{25}$, wherein R^{25} is hydroxy, lower alkoxy, amino, guanidino, or imidazolylamino;

Y is hydroxy, lower alkoxy, aralkyloxy, or acyloxy; or

X and Y combined represent, -X-Y-, =O, $-CH_2O(C=O)O-$, $-CH_2OC(=S)O-$, $-CH_2NR^{26}C(=O)-$ (wherein R^{26} is hydrogen or lower alkyl), $-CH_2NHC(=S)O-$, $-CH_2OS(=O)O-$, or $-CH_2OC(CH_3)_2O-$; and

W^1 and W^2 are hydrogen, or W^1 and W^2 together represent oxygen;

or a pharmaceutically acceptable salt thereof.

7. A method for enhancing the function of a trophic factor responsive cell, comprising the step of contacting said cell with at least one compound of claim 2.

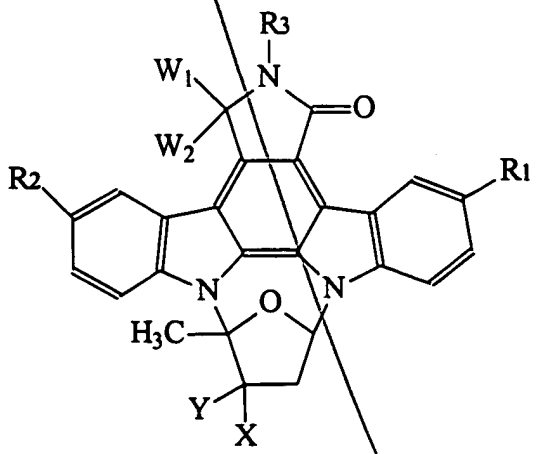
8. A method for enhancing the function of a trophic factor responsive cell, comprising the step of contacting said cell with at least one compound of claim 5.

9. The method of claim 6, wherein said trophic factor responsive cell is in a mammal.

10. The method of claim 6, wherein said trophic factor responsive cell is a neuron.

11. The method of claim 10, wherein said neuron is selected from the group consisting of cholinergic neurons and sensory neurons.

12. A method for enhancing the survival of a trophic factor responsive cell, comprising the step of contacting said cell with a compound defined by the general formula (I):



wherein:

one of R^1 and R^2 is selected from the group consisting of:

a) $-CO(CH_2)_jR^4$, wherein j is 1 to 6, and R^4 is selected from the group consisting of:

1) hydrogen and a halogen;

2) $-NR^5R^6$, wherein R^5 and R^6 independently are hydrogen, substituted lower alkyl, unsubstituted lower alkyl, substituted aryl, unsubstituted aryl, substituted heteroaryl, unsubstituted heteroaryl, substituted aralkyl, unsubstituted aralkyl, lower alkylaminocarbonyl, or lower alkoxycarbonyl; or R^5 and R^6 are combined with a nitrogen atom to form a heterocyclic group;

3) N_3;

4) $-SR^{27}$, wherein R^{27} is selected from the group consisting of:

i) hydrogen;

ii) substituted lower alkyl;

iii) unsubstituted lower alkyl;

iv) substituted aryl;

v) unsubstituted aryl;

vi) substituted heteroaryl;

vii) unsubstituted heteroaryl;

viii) substituted aralkyl;

ix) unsubstituted aralkyl;

x) thiazolinyl;

xi) $-(CH_2)_aCO_2R^{28}$, wherein a is 1 or 2, and R^{28} is selected from the group consisting of: hydrogen and lower alkyl; and

xii) $-(CH_2)_aCONR^5R^6$; and

5) OR^{29} (wherein R^{29} is hydrogen, substituted lower alkyl, unsubstituted lower alkyl, or COR^{30} (wherein R^{30} is hydrogen, lower alkyl, substituted aryl, unsubstituted aryl, substituted heteroaryl, or unsubstituted heteroaryl));

b) $-CH(OH)(CH_2)_bR^{4A}$, wherein b is 1 to 6 and R^{4A} is hydrogen or the same as R^4;

c) $-(CH_2)_dCHR^{31}CO_2R^{32}$ wherein d is 0 to 5, R^{31} is hydrogen, $-CONR^5R^6$, or CO_2R^{33} (wherein R^{33} is hydrogen or lower alkyl), and R^{32} is hydrogen or lower alkyl;

d) $-(CH2)_dCHR^{31}CONR^5R^6$;

e) $-(CH_2)_kR^7$ wherein k is 2 to 6, and R^7 is halogen, CO_2R^8 (wherein R^8 is

hydrogen, lower alkyl, substituted aryl, unsubstituted aryl, substituted heteroaryl, or unsubstituted heteroaryl), $CONR^5R^6$, substituted aryl, unsubstituted aryl, substituted heteroaryl, unsubstituted heteroaryl, OR^9 (wherein R^9 is hydrogen, substituted lower alkyl, unsubstituted lower alkyl, acyl, substituted aryl, or unsubstituted aryl), SR^{27B} (wherein R^{27B} is the same as R^{27}), $NR^{10}R^{11}$ (wherein R^{10} and R^{11} are the same as R^5 and R^6) or N_3;

f) $-CH=CH(CH_2)_mR^{12}$ wherein m is 0 to 4, and R^{12} is hydrogen, lower alkyl, CO_2R^{8A} (wherein R^{8A} is the same as R^8), $-CONR^5R^6$, substituted aryl, unsubstituted aryl, substituted heteroaryl, unsubstituted heteroaryl, OR^{9A} (wherein R^{9A} is the same as R^9), or $NR^{10A}R^{11A}$ (wherein R^{10A} and R^{11A} are the same as R^5 and R^6);

g) $-CH=C(CO_2R^{33A})_2$, wherein R^{33A} is the same as R^{33};

h) $-C\equiv C(CH_2)_nR^{13}$, wherein n is 0 to 4, and R^{13} is the same as R^{12};

i) $-CH_2OR^{44}$, wherein R^{44} is substituted lower alkyl;

and the other of R^1 or R^2 is selected from the group consisting of

j) hydrogen, lower alkyl, halogen, acyl, nitro, $NR^{14}R^{15}$ (wherein R^{14} or R^{15} is hydrogen or lower alkyl, and the other is hydrogen, lower alkyl, acyl, carbamoyl, lower alkylaminocarbonyl, substituted arylaminocarbonyl or unsubstituted arylaminocarbonyl);

k) $-CH(SR^{34})_2$, wherein R^{34} is lower alkyl or alkylene;

l) $-CH_2R^{35}$, wherein R^{35} is OR^{36} (wherein R^{36} is tri-lower alkyl silyl in which the three lower alkyl groups are the same or different, or is the same as R^{29}), or SR^{37} (wherein R^{37} is the same as R^{27});

m) $-CO(CH_2)_qR^{16}$, wherein q is 1 to 6, and R^{16} is the same as R^4;

n) $-CH(OH)(CH_2)_eR^{38}$, wherein e is 1 to 6, and R^{38} is the same as R^{4A};

o) $-(CH_2)_fCHR^{39}CO_2R^{40}$, wherein f is 0 to 5, R^{39} is the same as R^{31} and R^{40} is the same as R^{32};

p) $-(CH_2)_rR^{17}$, wherein r is 2 to 6, and R^{17} is the same as R^7;

q) $-CH=CH(CH_2)_tR^{18}$, wherein t is 0 to 4, and R^{18} is the same as R^{12};

r) $-CH=C(CO_2R^{33B})_2$, wherein R^{33B} is the same as R^{33};

s) $-C\equiv C(CH_2)_uR^{19}$, wherein u is 0 to 4, and R^{19} is the same as R^{13});

R^3 is hydrogen, acyl, or lower alkyl;

X is selected from the group consisting of:

a) hydrogen;

b) formyl;

c) lower alkoxycarbonyl;

d) $-CONR^{20}R^{21}$, wherein:

R^{20} and R^{21} independently are:

hydrogen;

lower alkyl;

$-CH_2R^{22}$, wherein R^{22} is hydroxy, or

$-NR^{23}R^{24}$ (wherein R^{23} or R^{24} is hydrogen or lower alkyl, and the other is hydrogen, lower alkyl, or the residue of an α-amino acid in which the hydroxy group of the carboxyl group is excluded, or R^{23} and R^{24} are combined with a nitrogen atom to form a heterocyclic group); and

e) $-CH=N-R^{25}$, wherein R^{25} is hydroxy, lower alkoxy, amino, guanidino, or imidazolylamino;

Y is hydroxy, lower alkoxy, aralkyloxy, or acyloxy; or

X and Y combined represent, -X-Y-, =O, $-CH_2O(C=O)O-$, $-CH_2OC(=S)O-$, $-CH_2NR^{26}C(=O)-$ (wherein R^{26} is hydrogen or lower alkyl), $-CH_2NHC(=S)O-$, $-CH_2OS(=O)O-$, or $-CH_2OC(CH_3)_2O-$; and

W^1 and W^2 are hydrogen, or W^1 and W^2 together represent oxygen;

or a pharmaceutically acceptable salt thereof.

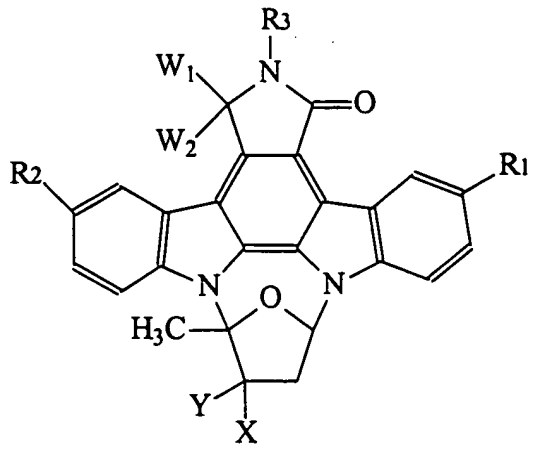
13. A method for enhancing the survival of a trophic factor responsive cell, comprising the step of contacting said cell with a compound of claim 2.

14. A method for enhancing the survival of a trophic factor responsive cell, comprising the step of contacting said cell with a compound of claim 5.

15. The method of claim 12, wherein said trophic factor responsive cell is a neuron.

16. The method of claim 15, wherein said neuron is a cholinergic neuron.

17. A method for enhancing the survival of a cell at risk of dying, comprising the step of contacting said cell with a compound defined by the general formula (I):



wherein:

one of R^1 and R^2 is selected from the group consisting of:

a) $-CO(CH_2)_jR^4$, wherein j is 1 to 6, and R^4 is selected from the group consisting of:

1) hydrogen and a halogen;

2) $-NR^5R^6$, wherein R^5 and R^6 independently are hydrogen, substituted lower alkyl, unsubstituted lower alkyl, substituted aryl, unsubstituted aryl, substituted heteroaryl, unsubstituted heteroaryl, substituted aralkyl, unsubstituted aralkyl, lower alkylaminocarbonyl, or lower alkoxycarbonyl; or R^5 and R^6 are combined with a nitrogen atom to form a heterocyclic group;

3) N_3;

4) $-SR^{27}$, wherein R^{27} is selected from the group consisting of:

i) hydrogen;

ii) substituted lower alkyl;

iii) unsubstituted lower alkyl;

iv) substituted aryl;

v) unsubstituted aryl;

vi) substituted heteroaryl;

vii) unsubstituted heteroaryl;

viii) substituted aralkyl;

ix) unsubstituted aralkyl;

x) thiazolinyl;

xi) $-(CH_2)_aCO_2R^{28}$, wherein a is 1 or 2, and R^{28} is selected from the group consisting of: hydrogen and lower alkyl; and

xii) $-(CH_2)_aCONR^5R^6$; and

5) OR^{29} (wherein R^{29} is hydrogen, substituted lower alkyl, unsubstituted lower alkyl, or COR^{30} (wherein R^{30} is hydrogen, lower alkyl, substituted aryl, unsubstituted aryl, substituted heteroaryl, or unsubstituted heteroaryl));

b) $-CH(OH)(CH_2)_bR^{4A}$, wherein b is 1 to 6 and R^{4A} is hydrogen or the same as R^4;

c) $-(CH_2)_dCHR^{31}CO_2R^{32}$ wherein d is 0 to 5, R^{31} is hydrogen, $-CONR^5R^6$, or CO_2R^{33} (wherein R^{33} is hydrogen or lower alkyl), and R^{32} is hydrogen or lower alkyl;

d) $-(CH2)_dCHR^{31}CONR^5R^6$;

e) $-(CH_2)_kR^7$ wherein k is 2 to 6, and R^7 is halogen, CO_2R^8 (wherein R^8 is hydrogen, lower alkyl, substituted aryl, unsubstituted aryl, substituted heteroaryl, or unsubstituted heteroaryl), $CONR^5R^6$, substituted aryl, unsubstituted aryl, substituted heteroaryl, unsubstituted heteroaryl, OR^9 (wherein R^9 is hydrogen, substituted lower alkyl, unsubstituted lower alkyl, acyl substituted aryl, or unsubstituted aryl), SR^{27B} (wherein R^{27B} is the same as R^{27}), $NR^{10}R^{11}$ (wherein R^{10} and R^{11} are the same as R^5 and R^6) or N_3;

f) $-CH=CH(CH_2)_mR^{12}$ wherein m is 0 to 4, and R^{12} is hydrogen, lower alkyl, CO_2R^{8A} (wherein R^{8A} is the same as R^8), $-CONR^5R^6$, substituted aryl, unsubstituted aryl, substituted heteroaryl, unsubstituted heteroaryl, OR^{9A} (wherein R^{9A} is the same as R^9), or $NR^{10A}R^{11A}$ (wherein R^{10A} and R^{11A} are the same as R^5 and R^6);

g) $-CH=C(CO_2R^{33A})_2$, wherein R^{33A} is the same as R^{33};

h) $-C\equiv C(CH_2)_nR^{13}$, wherein n is 0 to 4, and R^{13} is the same as R^{12};

i) $-CH_2OR^{44}$, wherein R^{44} is substituted lower alkyl;

and the other of R^1 or R^2 is selected from the group consisting of

j) hydrogen, lower alkyl, halogen, acyl, nitro, $NR^{14}R^{15}$ (wherein R^{14} or R^{15} is hydrogen or lower alkyl, and the other is hydrogen, lower alkyl, acyl, carbamoyl, lower alkylaminocarbonyl, substituted arylaminocarbonyl or unsubstituted arylaminocarbonyl);

k) $-CH(SR^{34})_2$, wherein R^{34} is lower alkyl or alkylene;

l) $-CH_2R^{35}$, wherein R^{35} is OR^{36} (wherein R^{36} is tri-lower alkyl silyl in which the three lower alkyl groups are the same or different, or is the same as R^{29}), or SR^{37} (wherein R^{37} is the same as R^{27});

m) $-CO(CH_2)_qR^{16}$, wherein q is 1 to 6, and R^{16} is the same as R^4;

n) $-CH(OH)(CH_2)_eR^{38}$, wherein e is 1 to 6, and R^{38} is the same as R^{4A};

o) $-(CH_2)_fCHR^{39}CO_2R^{40}$, wherein f is 0 to 5, R^{39} is the same as R^{31} and R^{40} is the same as R^{32};

p) $-(CH_2)_rR^{17}$, wherein r is 2 to 6, and R^{17} is the same as R^7;

q) $-CH=CH(CH_2)_tR^{18}$, wherein t is 0 to 4, and R^{18} is the same as R^{12};

r) $-CH=C(CO_2R^{33B})_2$, wherein R^{33B} is the same as R^{33};

s) $-C\equiv C(CH_2)_uR^{19}$, wherein u is 0 to 4, and R^{19} is the same as R^{13});

R^3 is hydrogen, acyl, or lower alkyl;

X is selected from the group consisting of:

a) hydrogen;

b) formyl;

c) lower alkoxycarbonyl;

d) $-CONR^{20}R^{21}$, wherein:

R^{20} and R^{21} independently are:

hydrogen;

lower alkyl;

$-CH_2R^{22}$, wherein R^{22} is hydroxy, or

$-NR^{23}R^{24}$ (wherein R^{23} or R^{24} is hydrogen or lower alkyl, and the other is hydrogen, lower alkyl, or the residue of an α-amino acid in which the hydroxy group of the carboxyl group is excluded, or R^{23} and R^{24} are combined with a nitrogen atom to form a heterocyclic group); and

e) $-CH=N-R^{25}$, wherein R^{25} is hydroxy, lower alkoxy, amino, guanidino, or imidazolylamino;

Y is hydroxy, lower alkoxy, aralkyloxy, or acyloxy; or

X and Y combined represent, -X-Y-, =O, $-CH_2O(C=O)O-$, $-CH_2OC(=S)O-$, $-CH_2NR^{26}C(=O)-$ (wherein R^{26} is hydrogen or lower alkyl), $-CH_2NHC(=S)O-$, $-CH_2OS(=O)O-$, or $-CH_2OC(CH_3)_2O-$; and

W^1 and W^2 are hydrogen, or W^1 and W^2 together represent oxygen;

or a pharmaceutically acceptable salt thereof.

18. A method for enhancing the survival of a cell at risk of dying, comprising the step of contacting said cell with a compound of claim 2.

19. A method for enhancing the survival of a cell at risk of dying, comprising the step of contacting said cell with a compound of claim 5.

20. The method of claim 17, wherein said cell is at risk of dying due to a process selected from the group consisting of aging, trauma, and disease.

21. The method of claim 20, wherein said cell is a neuron.

22. The method of claim 16, wherein said method is used in the treatment of Huntington's disease.